PROCESSOR

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Mobile Device Selection

Determine Which Portable Powerhouse Is The Best Fit For Employees' Needs

by Carmi Levy
• • •

ON-THE-GO WORKERS have never had it so good. Mobile offerings—from generic laptops to inexpensive netbooks to do-it-all smartphones—are redefining how work gets done away from the office. High-powered devices make it easy to work from anywhere without compromising functionality.

But who gets what? Who decides? And how do you know if the right people have the right kinds of mobile devices?

"There aren't any hard-and-fast rules," says Jack Gold, president and principal analyst of J.Gold Associates. "The best you can do is put some guidelines in place."

It's All About Process

Gold says some companies tend to follow a top-down mentality when it comes to introducing new mobile devices. "Often, the CEO sees something he likes, and you'll go out and buy it because he tells you to," says Gold. "You

do it, quite frankly, because you want to keep your job."

To address this process-unaware approach to mobile procurement, Gold recommends getting back to base principles and letting needs drive your mobile acquisition and implementation strategy. "You'll want to build a fairly small list of different classes of users," says Gold. "No more than two, three, or four classes."

Key Points

- Start with an analysis of end-user needs and work your way back.
- Classify users and departments and use the resulting groups to simplify your final choices.
- Monitor productivity and satisfaction levels; they're closely correlated, and bad device choices inevitably show up here.

The classes could include the following types of users:

- Heavy users of mobile email who might require a smartphone such as a BlackBerry.
- Road warriors who need something light and portable such as a netbook.
- Office workers who take work home with them and need the capabilities of a full-fledged notebook.

Michelle Warren, president of Toronto-based MW Research & Consulting, says netbooks, because they are so new on the market, may give some companies pause. If employee mobility and application requirements point toward a netbook, but leadership still won't sign off on them, Warren recommends a

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Green Investment: Flywheels

A Viable Alternative To Battery UPSes

by Kurt Marko
• • •

FLYWHEELS ARE AN ANCIENT technology right out of "The Flintstones," so who would have thought that Info-Tech Research would name them one of the 10 savviest IT investments for 2009? How did such a primeval implement make the transi-

tion from James Watt's steam engine to today's data center? Simple: Flywheels happen to be a very efficient means of energy storage—think of them as mechanical batteries—and UPS vendors have discovered flywheels have some palpable advantages over traditional, voltaic cell chemical energy storage.

According to Info-Tech's 2009 tech preview, "One of the least-known but most valuable green products for the data center is the flywheel, which essentially

> **"One of the least-known but most valuable green products for the data center is the flywheel, which essentially stores energy for use when power is interrupted."**
>
> *- Info-Tech's 2009 tech preview*

stores energy for use when power is interrupted. It is a clean and cost-effective alternative to battery-based uninterruptible power supplies." Yet IT managers tend to be cold-eyed realists. Darin Stahl, lead analyst at Info-Tech, notes that although green initiatives may have the attention of upper management, his IT clients are far more interested in saving money than saving the planet. Although flywheels certainly eliminate the environmental hazards associated with large lead-acid UPS batteries, he says the bigger reason flywheels aroused the interest of IT managers is their financial and maintenance advantages.

Theory Of Operation

When most think of a flywheel, they envision the traditional potter's wheel, a heavy stone disk artists use to maintain consistent rotation without sustained effort. To understand how flywheels work

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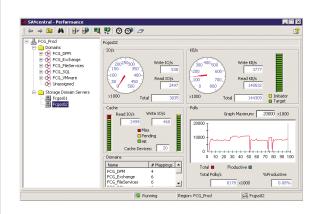
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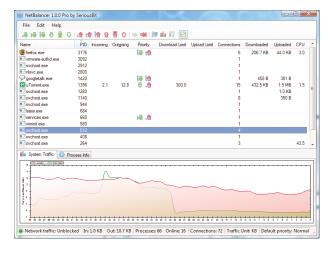
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NETWORKING & VPN

SeriousBit NetBalancer is an Internet traffic control and monitoring tool designed for Windows XP/2003/Vista.

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Internet Traffic Control
SeriousBit NetBalancer

How do you combine required network activities without getting slowed by bandwidth-hogging activities? Most traffic-shaping tools set speed limits for applications and processes, though it is not very convenient. For example, you limit your downloading speed and surf your favorite Web site. When you are done with surfing, the bandwidth is free, yet your downloading speed is still limited. Dealing with limits implies constant tuning of your traffic-shaping program.

With SeriousBit NetBalancer, such problems are obsolete. In addition to traffic limits, you can set download and upload priorities for all applications. Applications with higher priority get more bandwidth than those with lower priority.
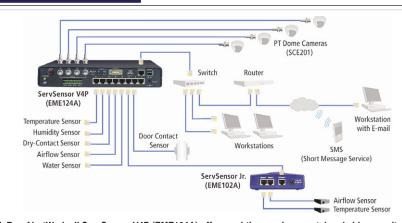
Unlike other traffic-shaping software, NetBalancer does not limit low-priority applications when high-priority ones don't use the network. The limits are changed automatically according

to priorities, giving NetBalancer an advantage over other similar tools.

NetBalancer lets you:
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to monitor and store photographic records. Move and zoom cameras via the easy-to-use Web interface without the need for expensive controllers.

The Web interface also generates graphs for each sensor, and the event log history can be downloaded in a text file or remotely polled and saved automatically to a PC.

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News

HP Warns Users To Patch Some Printers

Users of certain models of HP laser printers should update their firmware, according to HP, to prevent hackers from gaining access to documents previously printed on the machines. Printers impacted include 10 LaserJet models ranging from the 2410 to the 9050, two Color LaserJet models, and the 9200C Digital Sender printer. These machines are vulnerable to remote attacks over the Web because of a bug in the printer's Web-based control interface, meaning hackers can read system configuration files and cached documents. To prevent the hacks from occurring, HP is encouraging the machines' owners to immediately download and install firmware upgrades.

EU Wants Windows Users To Have Choice In Browsers . . .

The European Union's antitrust agency is charging Microsoft with unlawful competition and could make the Redmond, Wash.,-based company include browsers other than Internet Explorer in Windows. According to a Form 10-Q document filed by Microsoft with the U.S. Securities and Exchange Commission, the EU says Microsoft "shields" Internet Explorer from "head-to-head competition" by bundling Internet Explorer with Windows, which it has been doing since 1995. Microsoft says computer users are already free to run other browsing software on Windows, although disabling certain parts of IE may be required if a user chooses another browser.

. . . & Mozilla Gives Its Support To EU's Ruling Against Microsoft

The EU sent a Statement of Objections to Microsoft concerning the software company tying its Internet Explorer Web browser with its operating systems. Mozilla, maker of the popular Firefox Web browser, publicly announced its support of the EU's ruling. Microsoft has eight weeks to reply to the EU and stated that it was studying the documents before taking any action. The company says it needs to weigh its options and decide how to comply with the EU's laws.

Sun Reorganizes

Marten Mickos, vice president of Sun Microsystems' database group, has resigned from the company. Mickos was also previously the chief executive of the MySQL branch. His resignation came just days after that of Monty Widenius, MySQL co-founder, who left to start his own business. Sun is in the process of reorganization, which the company expects will curb its recent losses. Part of that reorganization involves the launch of a cloud computing service, which has been in the works for some time. The details of the launch will not be announced until mid-March.

Lenovo CEO Leaves

William Amelio, president and CEO of Lenovo, has resigned. He will be replaced by Yang Yuanqing, who held the CEO position until April 2005 after which he became board chairman. Amelio will remain as a special adviser until sometime this fall. Amelio's announcement came after Lenovo posted a third-quarter loss of about $97 million. Year ago third-quarter profits were $172.6 million. Lenovo expects to save $300 million a year with the restructuring in January that resulted in the loss of 2,500 positions.

Satyam Has New Cash, CEO

The board appointed by the Indian government to oversee troubled outsourcing firm Satyam has raised $130 million in working capital and has also announced a new CEO. A.S. Murthy, a 15-year employee of Satyam, immediately took the reins of the company embroiled in a fraudulent accounting scandal and facing class-action suits in the United States. Two advisors to Murthy were also appointed by the board. Homi Khusrokhan, previously the managing director of Tata Chemicals, will assist with Satyam's management, while Partho Datta, formerly the finance director of the Murugappa Group, will facilitate the company's financial reassessment.

Nokia Scales Back Operations

Temporary layoffs, reduced production, and a site closing are all in Nokia's plans to weather the economic downturn. The Finnish mobile phone giant announced it would temporarily lay off, in rotating groups, 20 to 30% of the 2,500 workers at its production plant in Salo. The Salo facility will continue to make products and conduct mobile device research and development, unlike Nokia's site in Jyväskylä, which will be closed by the end of the year. That closure will affect 320 employees. A further 90 workers may be let go in the company's New Businesses department in its Services area.

Kaspersky Admits Breach

Kaspersky Lab says it was unaware that a database containing customer information had been exposed for about 11 days. The security company did not know of the breach until Romanian hackers reported in a blog post that they were able to launch an SQL injection attack on the Kaspersky site and expose customer data. Roel Schouwenberg, one of Kaspersky's senior antivirus researchers, confirmed the attack, but explained that only the database table labels had been accessed, not the customers' actual data. He admitted, though, that more advanced hackers could have reached the sensitive data. Kaspersky has now hired Next Generation Security Software to perform an audit of the company's systems.

HP Offers 0% Financing . . .
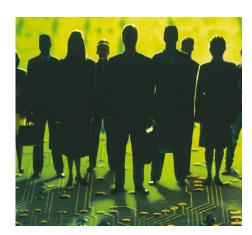
HP announced 0% financing promotions, including a 0% 12-month promotion plan where the equipment can be purchased for $1 at the end of the term and a 0% 36-month lease offer that provides a fair market value purchase option at the end of the lease term. HP Financial Services offers the two promotions to provide customers the choice to either lease or own the products. The financing plans allow customers in the United States to purchase between $1,500 and $150,000 worth of products from HP's portfolio. Canadian customers can finance from CDN$5,000 to CDN$150,000 worth of products. The financing offers are available through April 30.

. . . & Dell Does, Too

Computer maker Dell is offering a 0% lease promotion with 36-month financing for any U.S. small or medium-sized business. This package, similar to Dell's EqualLogic storage hardware deal, applies to its line of Latitude laptops and PowerEdge Energy Smart servers. Dell is targeting businesses that are looking to enhance performance and productivity while lowering overall maintenance costs. After the lease is up, Dell customers have the option to buy out the equipment. The terms require that businesses spend no less than $25,000 before May 1. The following systems qualify for free financing: Latitude E5500, E6400, and E6500 and PowerEdge 1950 and 2950 servers.

Kaiser Data Breach Could Affect 30,000 Employees

Kaiser Permanente, a California-based HMO, says a security breach may have exposed the confidential data of about 30,000 of its employees. Kaiser doesn't know how many employees have been affected, but it says several have reported identity fraud as a result of the breach. The stolen information included employee names, addresses, dates of birth, and Social Security numbers. Police have arrested one person related to the theft, but it was not clear how that person obtained the stolen data. Kaiser says it has begun an investigation into the source of the breach.

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 14 major companies in the technology market.

Company	Symbol	Year Ago	Feb. 6	Feb. 13	% change from previous week
AMD	AMD	$6.70	$2.41	$2.38	▼ 1.24%
Computer Associates	CA	$24.75	$18.56	$18.69	▲ 0.7%
Cisco Systems	CSCO	$24.06	$17.04	$16.24	▼ 4.69%
Dell	DELL	$20.31	$9.46	$9.22	▼ 2.54%
Google	GOOG	$534.62	$371.28	$360.19	▼ 2.99%
HP	HPQ	$44.05	$36.85	$35.97	▼ 2.39%
IBM	IBM	$108.42	$96.14	$94.39	▼ 1.82%
Intel	INTC	$21.21	$14.73	$14.10	▼ 4.28%
McAfee	MFE	$34.50	$30.13	$31.49	▲ 4.51%
Microsoft	MSFT	$28.96	$19.66	$19.25	▼ 2.09%
Oracle	ORCL	$19.66	$17.97	$17.85	▼ 0.67%
Red Hat Software	RHT	$18.61	$16.19	$15.33	▼ 5.31%
Sun Microsystems	JAVA	$17.39	$5.73	$5.20	▼ 9.25%
Symantec	SYMC	$18.13	$16.06	$14.96	▼ 6.85%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

PRODUCTS *At Work*

Not Just For Students

Principals In Diocese Find Security & Ease Of Use With School Web Lockers

by Robyn Weisman

• • •

SISTER DEBBIE TIMMIS, director of educational technology at the Roman Catholic Diocese of Albany, N.Y. (www.rcda.org), was seeking out a more seamless and secure solution for providing and exchanging information with the principals at the 26 elementary schools and four high schools that make up her diocese's district. Her previous solution was cumbersome, time-consuming, and could not ensure her principals got all the files they needed.

Years ago, Timmis' office had decided not to print out hard copies of everything it sent out because of environmental concerns. So every month, Timmis would create a password-protected Web page labeled with the month and year where she would post folders of information that included administrative forms and budgetary files, among other things, that the 30 principals could then download from the password-protected Web page.

But the setup was maddening, Timmis admits. For example, she would post forms that needed a response by a given date, and too often, people would say they hadn't gotten the forms. Conversely, there were times that she would need one of the principals to complete a form before she could post it, and she often wouldn't get it until the last minute. Meanwhile, people would ask to see a previous month's folder, which required hyperlinking all the previous months' Web pages. Timmis also was unable to monitor who was accessing the files, which concerned her because of the security ramifications.

Additionally, large files, such as budgets, couldn't be sent back and forth because Timmis' email client wouldn't accept them, even if the principals had the capability to send them. "And they didn't know how to upload files to the Internet," Timmis says. "I wasn't even going to go there."

Timmis researched different password protection programs, but they were expensive and required the Diocese to purchase a secure server at a monthly cost that was prohibitive. Even then, this type of solution didn't solve the problem of getting 30 different revised budgets sent back to her without her knowing conclusively where the revisions had originated.

Then Timmis found an almost perfect solution that would cost the Diocese an initial setup cost of $800 and then a dollar per person, per year for subsequent years. What she found was the SaaS-based School Web Lockers (www.schoolweblockers.com), a solution designed to create virtual secure storage lockers for K-12 students.

Repurposing Without Pain

Timmis discovered School Web Lockers in the trade magazine *Tech & Learning* (www.techlearning.com). "School Web Lockers . . . was really made to use in a classroom, and in a teaching environment, it would be wonderful," Timmis says. "Kids can't lose stuff or make excuses like, 'I left [my] floppy disk at home!' because the folder exists on the Internet, not on a server."

Timmis thought that if she could repurpose School Web Lockers so that she made each principal the equivalent of a student, gave each one of them a login and password, and then every month gave them access to the "class"—the class being her monthly online mailing/download—Timmis could then send an email to the principals saying all the new files are posted, and the principals could go online, log in as themselves, and download the file folders. Likewise, the principals could then easily upload revised budgets and other documents to their individual lockers for Timmis to retrieve.

"I called School Web Lockers and said, 'I'm not going to have 1,000 people. I'm going to have 30 principals, maybe 50 people at the most, and is that OK with you?' And they were fine with that," Timmis says.

For Timmis, School Web Lockers also solved the problem of principals asking for a previous month's files. Instead of requiring a mass of hyperlinks to find past files, School Web Lockers' home directories are neatly organized by year. Also, with daily backup, users can access a random file uploaded two months or two years earlier.

Outstanding Customer Service & Easy Implementation

Overall, Timmis found School Web Lockers' customer service and tech support to be outstanding. "I didn't feel like I was one of a million people, and this is the way it is for everybody. I felt like I had access to people there. I could ask questions. I could say, 'This file was a little too big; I can't get it [to upload],' and then they worked with me and made sure I was able to upload larger files," she says.

Timmis also found implementing School Web Lockers to be a straightforward, simple task. "All I had to do was give an Excel spreadsheet of the first and last names of all the principals [in the diocese] and then what I wanted their login passwords to be. I emailed the spreadsheet to School Web Lockers, and I would say in a matter of a few hours, everybody had their login and password," Timmis says.

Timmis adds that she thinks this process would be just as easy to implement for the 800 or so students in her district. "Just upload information to their files. If I were with the kids, I would say, 'Let's do a car wash, and we're going to keep a dollar each for all of you, and you're going to have your own Web locker. It's wonderful!'" says Timmis.

Hanging In The (Secure) Cloud

Timmis also uses School Web Lockers to store and back up certain files in her own virtual locker. "I like the Home folder they use with classes, because sometimes with Google Docs, for example, you can store Word programs and stuff like that, but sometimes I see something that I really like, and I download it, and I just put it up in my home folder, because then I can access it from wherever I am," she says.

In addition, Timmis stresses that School Web Lockers' solution is really secure. "Nobody would be able to go into School Web Lockers and access your folder or your space, and I think, from a teaching point of view, I think it would be really secure for the kids because they can keep all their stuff in their folders password-protected, and only they would know it, not the teacher or anybody else," she says.

> **School Web Lockers solved the problem of accessing a previous month's files: Instead of requiring a mass of hyperlinks to find past files, School Web Lockers' home directories are neatly organized by year.**

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SiteSURVplus adds network Web access management to the package, allowing companies to choose their own settings based on 13 blocked categories and an additional 30 categories for allowed or blocked Web sites. With SiteSURVplus, CyberPatrol's SiteCAT database is stored on a company's network server, so all Internet requests are filtered locally—quickly and with less bandwidth usage. The database is updated hourly to ensure the most up-to-date information possible. Site-SURV and SiteSURVplus work with both PC and Mac systems.

Truly See Eye To Eye

Tandberg Profile

Enterprises are making difficult cost-cutting decisions, often turning to travel budgets first for reductions. This doesn't mean companies can eliminate face-to-face communications with off-site customers and partners, however. The cost-effective solution is Tandberg's Profile, a 1080p HD videoconferencing system that generates a telepresence-quality experience in a Scandinavian design that's adaptable to rooms of various sizes.

Providing a widescreen LCD, PrecisionHD 1080p camera, integrated speakers and cabling, microphones, and a digital audio module housed in a stand constructed of aluminum materials, the Profile puts meeting participants in crisp, HD eye-to-eye contact. With 12X zoom and 0.3m-to-infinity focal range, the PrecisionHD camera projects 43.5-degree vertical and 72-

degree horizontal fields of vision on one widescreen 42-inch flat-screen LCD or one or two 52-inch flat-screen LCDs. Clear, CD-quality stereo audio comes way of a four-port audio mixer with four acoustic echo cancelers, active lip synchronization, and automatic gain control and noise reduction integrated.

At the Profile's core is the new next-generation Codec C60 1080p/720p video-collaboration engine, which supports up to four simultaneous microphones and four HD sources. Initiating meetings is one-button easy from the Profile's user interface. The Profile ships with a remote control; integrated speakers and cabling; a digital audio module; three or four microphones, depending on the LCD configuration; and choice of a floor- or wheel-based stand or wall-mounting kit.

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Version 2.5 includes collaborative storage enhancements that let the software extend its user storage management capabilities to groups. Rather than having to first create a Group object in eDirectory, an administrator can now use collaborative storage based on the Organizational Unit object itself. Path Analysis allows administrators to browse down a file path from any server and volume to a particular folder and perform an analysis of both access rights. Path Analysis can also report file types that are being stored and all subfolders based on file extension.

Network administrators in the process of consolidating servers will benefit from Novell Storage Manager 2.5's ability to migrate collab- ative storage by changing the storage location path within the collaborative storage policy.

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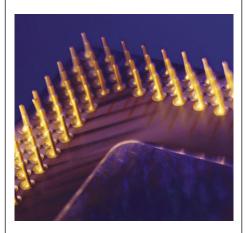
The State Of Semiconductor Affairs

The semiconductor chip business has been enduring some jolting changes, from bankruptcies and layoffs to consolidations and slow demand. As the dust settles from the latest round of shake-ups, a survey of the events is in order.

In terms of individual companies, Germany's Qimonda filed for bankruptcy in January—the first major chipmaker to do so. Hynix, the second-largest chipmaker in the world, is looking to sell off 36% of its shares. Additionally, some Taiwanese chipmakers have

turned to their government for a financial bailout. Toshiba may merge part of its semiconductor unit with NEC, and Samsung attempted to buy out SanDisk for $5.8 billion in cash but was rebuffed. It's still possible that a buyout could happen, although Toshiba is also reportedly considering a SanDisk purchase.

Job cuts are an epidemic throughout the chip market. NEC plans to cut 20,000 jobs worldwide. Micron, the largest chipmaker in the United States, is cutting its workforce by 15% after eight straight losses, including $706 million in Q4 2008 and $1.6 billion throughout fiscal year 2008. Also, although Intel is investing $7 billion to retrofit its manufacturing facilities for its new 32nm fabrication process, the company also laid off 5,000 to 6,000 employees stateside.

Globally, chip sales dropped 22% in 2008, from $22.3 billion to $17.4 billion. Further declines are expected. Other slowdowns are apparent across the industry, as Toshiba and SanDisk announced plans to cut output of flash chips by 30%.

What It Means For SMEs

As the chip market deals with the challenges of a sagging economy, enterprises everywhere wonder about how these struggles will impact the cost of hardware.

According to Matthew Wilkins, principal analyst for Compute Platforms Research, enterprises may have little to fret about in regards to chip companies. "I think enterprises will be—and are—looking at reducing the amount of equipment they purchase in the current economic situation and making sure that they maximize the workloads of the equipment they do purchase." In short, enterprises will likely be buying less equipment anyway, turning to technologies such as virtualization instead.

Wilkins further points out that the burden of cost is more on the suppliers than the buyers. "Reduced enterprise spending is clearly difficult for the suppliers of chips and systems, and those that are able to continue to meet their customers' needs will weather the storm better than those who are not."

by Seth Colaner

Improving Connections From The Road

Troubleshooting & Standardization Can Keep Users Connected Without Significant IT Intervention

by Elizabeth Millard

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TROUBLESHOOTING WITHIN A DATA CENTER can often be tricky, but at least an IT manager and staff members are right in front of a system or machine and can attempt different approaches for a fix. When trying to solve the problems posed by traveling or far-flung employees, however, guiding users through an upgrade or system change can be especially challenging.

That's why it's imperative to make sure that connections are robust from the start. Here are some tips for keeping employees clicking with confidence.

Standardize By Providing Multiple Service Levels

Part of having strong connections is creating a predictable schedule of upgrades and support for VPNs and mobile devices. Although an enterprise can usually create standardization around VPN purchasing, when it comes to mobile devices, standardization can be difficult.

"IT would like to stand on one mobile platform, as in giving all employees BlackBerry devices," says Ahmed Datoo, vice president of marketing at Zenprise, a developer of mobile management software (www.zenprise.com). "But a lot of IT organizations are being pressured to support different types of devices."

Over the past decade, IT has been very effective at creating standardization around desktop systems, but mobility won't go in that direction, Datoo believes. And rather than try to force everyone onto the same device, he gravitates toward a strategy proposed by Ken Dulaney, an analyst at Gartner Research.

Dulaney notes that an IT department doesn't want to be in a position to say no to requests, but it can sidestep support tangles by creating different service levels for different devices. For example, IT can mandate that those on BlackBerrys will have full support, but if an employee wants an iPhone or other device, he can have IT set it up but then will only get limited support in the future.

"With different service levels, you're not in a position of saying you won't do support, but you're providing incentive for employees to standardize to one type of platform," says Datoo.
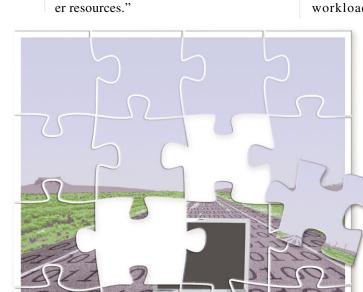
Build In Automation

To improve connections from the road, it's necessary not just to provide support when devices or machines go haywire but also to prevent those issues in the first place.

The data center has seen many advances in automation, primarily as a way to reduce the complexity of a heterogeneous environment, says Datoo. With different types of servers and Windows and Linux systems together, automation has been an efficient way to manage various interoperability issues.

"The same thing is going to happen on the device side," Datoo says. "In this recessionary climate, you won't get new resources for supporting different device types, so automation will be vital for supporting more connections with fewer resources."

There are existing applications that do a nice amount of automation, such as detection and remediation of issues. For example, a VPN might be experiencing connection trouble, but it's the middle of the night, and a user doesn't know about the glitch. An automation application continually checks the connection, finds the problem, and takes steps to correct it. By the time the user logs on, there's no more issue, and a support call and employee downtime are avoided.

Continuous monitoring is essential, Datoo notes, because otherwise the support issues would be overwhelming; plus, automation is a handy way to keep connections clear and strong.

"Most of support time is spent trying to figure out the problem," he says. "If you can get to the root cause of the problem quickly, it's a huge improvement. And that can be achieved through automation."

Outsource Support To Employees

Although an enterprise's IT department often handles a good deal of technical support for VPNs and mobile devices, that doesn't always have to be the case. Employees can be taught how to troubleshoot their own connection issues, alleviating the workload for IT and making for more robust connections.

Rather than expecting them to navigate complicated issues, though, an IT department can depend on a remote tech support firm that can guide users and help them learn to help themselves in the future.

"Because technicians are available at all hours, there's no lost productivity," says Fred King, vice president of sales and marketing at remote tech support firm PlumChoice (www.plumchoice.com). "And training can be provided so the same issue doesn't keep coming up again and again."

For instance, a remote tech support firm or an enterprise's IT department can recognize common connection problems and create a simple Web-based training guide for employees, accompanied by step-by-step instructions for common tasks such as resetting a VPN that they can keep on their hard drives.

Integrate More Management Tools

Another tactic for making devices and VPNs more self-sufficient is the integration of more management tools, which can then handle multiple tasks such as security controls, authentication, and even automated data storage. The marketplace has numerous options, notes Forrester Research analyst Ben Gray, particularly for SMEs that might not need tools designed for thousands of devices.

"There are some impressive applications available," says Gray. "They just seem to keep getting better and more robust in terms of what they offer."

Many can bring together security features such as user authentication with remote access capability, so an IT employee can "take over" the device in order to do upgrades or troubleshooting. Especially helpful is the ability to do a remote data deletion sequence if a device is inoperable, lost, or stolen.

Improving connections requires the implementation of several layers, similar to making sure that devices are secure. The involvement of employees, the use of support resources, and the integration of automation and management tools are all part of a larger strategy that keeps employees online and productive. ▣

Best Advice: Keep Your Antimalware Solutions Up-To-Date

These days, even mobile phones have become targets for digital miscreants, so it's imperative to see every device—from phone to laptop to VPN router—as part of the larger company network and treat each machine accordingly. This includes keeping your mobile devices' antimalware software up-to-date, because viruses and other online baddies can gum up connection speeds and prey on the efficiency of VPN tools.

Antivirus updates can be done in an automated fashion, but IT should still do periodic manual checks to make sure the updates are working properly.

Mobile Device Selection

hybrid approach of a smartphone/notebook combination.

Application needs will also drive the process, she adds. In many cases, smartphones lack the horsepower to run full-blown business applications, or the application is not available on the handheld platform. In either case, she says this validates starting with a needs analysis and working back from there. Warren recommends following a department-by-department approach when conducting this analysis.

"Each department will have different requirements," she says, and IT must examine each area's work habits and identify common trends among them. "Outside sales, for example, might need smartphones

> ## "By starting with end-user needs and going from there, you ensure the right people get the right tool for the job."
>
> *- J.Gold Associates' Jack Gold*

and netbooks, while the in-house sales team might need computers with headsets."

Even so, she advises keeping things simple. "Although increasingly we see heterogeneous IT environments, IT departments are encouraged to standardize as much as possible," she says, adding one way to simplify might include leveraging existing vendors.

"If HP is the brand of record for notebooks, for example, consider sticking with them for netbooks," she says.

Applications, Meet Needs

The next step is to define the applications each class of users will need to fulfill the requirements of their respective roles. Warren says this step can further refine the device selection process. If a required application isn't available on a smartphone platform, for example, attention immediately switches to devices that will run the software, such as notebooks or netbooks.

Once users have been classified and applications have been identified, IT can identify the technologies that best fit these needs and list the specific mobile products that should ideally be sourced.

"It's a multistep process that revolves around what your end user needs to get the job done, then filling out the technology that fits the bill," says Gold, who adds that most companies often follow the reverse process. "End users always start with the technology and try to make it work. But you can't do it that way and expect the whole process to work. By starting with end-user needs and going from there, you ensure the right people get the right tool for the job."

Assess Employee Satisfaction, Usage & Productivity

Often, the easiest way to determine how well a device deployment is working is to ask end users themselves. Warren suggests using surveys to paint an even broader, deeper picture. She also recommends asking users about their optimal work habits.

"Do they stay in the office? Do they move around? Ask how they would prefer to work. Stay clear of the assumption that everyone wants to stay in one spot," she says. "Some like to move around, such as going from office to office for privacy or for meetings, working at home, or working at client sites."

Proactively approaching end users about their mobile needs will also position IT to better assess productivity levels. Warren says productivity and satisfaction levels often correlate, but few organizations take the time to make the connection. They should, because she says productivity can quickly slide when the wrong form factors are deployed.

Gold recommends reaching out to peers in your market to find out what they're

Best Advice: Read The Danger Signs

IT must regularly ensure that mobile solutions fit end-user requirements. If there's a mismatch, the signs of failure can be quite obvious:

Maintenance costs increase at an above-average rate. Technologies that are mismatched to end-user needs fail more often than properly scoped and allocated solutions.

Calls to the help desk rise dramatically. "Your help desk is a great barometer of performance," says Jack Gold, president and principal analyst of J.Gold Associates.

Hours of work logged by IT staff experience sudden spikes. Sudden increases in hours worked can be a major danger sign. But avoid focusing only on overtime, warns Gold. Non-compensated hours can be just as telling.

End-user complaints skyrocket. Gold recommends simply talking to end users and asking them what is—or isn't—working. "Ask them. They'll probably be pretty frank with you," he says. "It's amazing how many organizations never bother to ask their end users."

doing to dictate mobile device deployment. "Ask them how they're handling these kinds of issues and what it's costing them," he says. "At the very least, it validates your thinking and points you in the right direction." P

Green Investment: Flywheels

and some of the trade-offs in their UPS implementations, it's necessary to dredge up some high school physics. Using Newton's Second Law (which describes the relationship between the force of an object and its momentum) and some simple algebra, the kinetic energy of an object in motion is seen as proportional to its mass and the square of its velocity. When applied to rotating objects, the velocity is expressed in revolutions per minute.

> ## Although they store an amazing amount of energy in a small space, flywheels can only supply power for a very short time— about 10 to 20 seconds vs. five to 15 minutes for batteries.

Thus, a flywheel's energy storage can be increased by either increasing the mass or the rotational velocity; however, doubling the mass only doubles the energy, while doubling the velocity quadruples it. This leads to a segmentation of the flywheel marketplace, with some vendors opting for heavy, low-speed devices, while others are focusing on systems with higher revolutions per minute.

The energy needed to initiate and maintain a spinning flywheel comes from the electric grid, a form of inefficiency known as standby loss. During a power glitch, kinetic energy is converted back into electricity using a conventional rotor/stator electric motor.

Advantages Of Flywheels

Most data center UPSes store power in lead-acid batteries—the same 150-year-old technology used for starter motors in cars—which are large, heavy, and filled

with toxic material. As power demands in the data center continue to escalate, UPS batteries have become gargantuan, with Stahl finding many of his clients concerned about the ability of their facilities to support the immense weight. For example, a relatively small 100kVA weighs about 6,000 pounds, while 1,000kVA systems may top out at 5 tons or more. A comparably sized high-speed flywheel system is about one-tenth the size, according to Frank DeLattre, chief marketing officer at VYCON (www.vyconenergy.com). Low-speed designs, while still less than half the footprint of batteries, are nevertheless comparably heavy, albeit much less expensive than their smaller, high-speed competitors, according to Martin Olsen, vice president of business development at Active Power (www.activepower.com).

DeLattre feels that a bigger advantage of flywheels is their reliability. He claims that the MTBF for battery UPS systems is about 2,500 hours, while flywheels are roughly 20 times that. Couple the lower reliability with a battery's much shorter life cycle and DeLattre says flywheels offer a more predictable backup energy source. Because batteries degrade with each use, DeLattre says, "You really don't know if a battery is good until you try to use it." Flywheels also require less ongoing maintenance according to Stahl, and because they don't contain hazardous materials, it's much easier and cheaper to dispose of them.

Factoring in space savings, energy efficiency, lower maintenance and disposal costs, and longer life span, vendors claim flywheel systems often can pay for themselves within the first year. Low-speed systems, such as those from Active Power, carry only about 10 to 15% price premium over battery units, according to Olsen.

Disadvantages Of Flywheels

So what's not to like about a space-saving, low-maintenance, environmentally friendly technology with significant ROI? Unfortunately, flywheels cannot exactly match batteries for sustained energy discharge. Although they store an amazing amount of energy in a small space, flywheels can only supply power for a very short time—about 10 to 20 seconds vs. five to 15 minutes for batteries.

Yet this discrepancy isn't as bad as it seems. According to FEMP (Federal Energy Management Program), "The vast majority of power disturbances last for five seconds or less." It notes that, "Today, many UPS systems are integrated with fuel-fired generators that can come up to full power within 10 seconds. Thus, the typical DC flywheel system,

designed to provide 15 seconds of full load power, could be substituted for batteries in UPS systems with fuel-fired generators."

Applying Flywheels

According to FEMP, flywheels are generally more reliable than batteries, with lower annual operation and maintenance expenses. It recommends flywheels for harsh operating environments not conducive to efficient battery operation, and, because of their smaller size, in conditions where floor space is limited and expensive. However, FEMP states, "A flywheel alone will not provide backup power for a period long enough to allow an orderly process shutdown in most cases." Thus, flywheels shouldn't be used in isolation—in other words, without a backup generator or auxiliary batteries.

Given current environmental sensitivities, flywheels are undoubtedly subject to a fair amount of greenwashing, but although they are certainly more environmentally sound than several tons of lead batteries, flywheels also have compelling technological, operational, and financial benefits, particularly when deployed in larger data centers outfitted with fuel-fired generators. P

Where To Use Flywheels & When To Avoid

DC flywheel energy-storage systems are generally more reliable than batteries, so applicability is mostly an issue of cost-effectiveness. Flywheels will look especially attractive in operating environments that are detrimental to battery life. Flywheels also have a much higher power density than batteries, typically by a factor of 5 to 10. The following conditions are particularly attractive for flywheels:

- Frequent cycling stemming from main power supply problems
- High operating temperatures associated with unconditioned space
- Floor space is expensive and has alternative uses

- Battery floor space must be reclaimed for other purposes
- Flywheels alone will not provide backup power for a period long enough to allow an orderly process shutdown in most cases

Therefore, the following limitations should be considered:

- Flywheels should not be used alone for backup power, without batteries and/or a fuel-fired generator
- Flywheels should not be used without batteries if a fuel-fired generator cannot reliably come up to full power in 10 seconds or less

Essential Mobile Tools

IBM X-Force Trend & Risk Report Reveals Vulnerabilities

It should come as no surprise to the enterprise sector that 2008 was a year characterized by a high number of severe vulnerabilities. According to IBM's X-Force Trend and Risk Report, critical security vulnerabilities rose 15.3%, while medium-level threats skyrocketed 67.5%. The good news is that 47% of these vulnerabilities can be fixed with a vendor patch. However, this statistic doesn't reconcile the fact that the majority of Web application vulnerabilities have no applicable patch. Overall, malicious attackers are expected to target SQL injection and take advantage of end users logging on to vulnerable Web sites.

Web-related security threats predominantly involve vulnerable Web applications. In the words of the report, "Web applications in general have become the Achilles heel of corporate IT security." Statistically, this means that 74% of Web app vulnerabilities "disclosed in 2008 had no available patch to fix them by the end of 2008." Dan Holden, X-Force manager for IBM, says, "Even if a patch is made available, many times it's days, weeks, or months after the vulnerability has already been public." IBM concludes that if the IT security industry understands that particular vulnerabilities, including SQL injection, Snapshot Viewer, and Microsoft Windows Server Service, require more investment in financial resources and time, then malicious hackers will have less opportunity to invade vital applications.

In terms of safeguarding the data center infrastructure, the ongoing trend is to focus on compliance first—security is seemingly secondary. Holden says, "Many times, we find SMBs spend all of their resources just meeting compliance before even contemplating security. While compliance with accepted government and industry regulations is required, it is not a blueprint for security." Security threats are always changing, and small to midsized enterprises must respond accordingly. "Because the threat evolves, often in reaction to published compliance standards, it may take years before standards catch up to the threat," Holden says.

Holden says that Web application vulnerabilities have grown at an enormous rate over the past three years. He adds that the reason for the recent large-scale attacks is that attackers have found ways to put automated processes that scan for vulnerabilities within Web sites, and as soon as they find a vulnerability, they exploit it. IT administrators cannot overlook these internal risks, which is why they "should be implementing a similar mentality and build a process around their Web application development and protection," says Holden. "This includes Web application scanning both during and after Web application deployment and the protection of these Web applications with intrusion prevention technology that scales to this security problem."

by Joanna Safford

Maximize Your Mobile Toolset To Better Unlock Wireless' Potential

by Bruce Gain

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THE CHOICE OF MOBILE TECHNOLOGIES is far from limited, with options ranging from smartphones to PDAs to powerful-yet-light laptops, each equipped with every increasing rollout of Wi-Fi, 3G cellular, or other wireless connectivity options. But network and data center managers are painfully aware of how putting all of these mobility tools to use can be difficult. Users' access to computing and network applications with mobile devices generally remains limited compared to that from their wired desktop PCs at the workplace, and battery life limitations, infrastructure problems, and other issues still pose challenges.

The good news is that there are plenty of ways for admins to improve on their enterprises' mobile applications. The small to medium-sized enterprise also often has more leeway to quickly implement new strategies with immediate cost savings, compared to the cumbersome bureaucracies of many large corporations.

Here are a few easy-to-implement ways to make better use of mobile applications in the enterprise.

Wireless Printers Equal Mobile Printers

The day when all enterprises might one day go paperless is still a long way off, so it's likely that printers will continue to be a part of standard enterprise equipment in the indefinite future, despite the necessary evils of replacement ink cartridges and paper waste. From an IT maintenance perspective, wired printers must be connected to the LAN for shared access, and their placement is not always easy to manage. Too often, Ethernet cables cannot reach to where printers are needed.

However, wireless printers offer a way around the problem. With wireless Ethernet connectivity, printers can more easily connect to users' machines wherever they are needed.

"You just can't have a printer unless there is an Ethernet cable," says Robert Enderle, an analyst for the Enderle Group. "[But] having a printer that is self-contained, network-aware, and wireless just gives you a lot more flexibility with where you place it."

Tread Carefully With Social Networking

Social networking sites such as Facebook can certainly serve as a boon to mobile users—for example, a user can access a social networking site with a laptop to let co-workers know how a meeting went or

that a project has been delayed just as easily from an airport gate as from down the hall. Improved online manager-to-employee and employee-to-employee communications and interactivity are just some of these sites' benefits, but social networking sites can also represent security risks.

Given the public nature of social networking sites and the ease with which communications are shared, then, any content communicated should be considered public. In fact, any content posted on a social networking site should be something that you would be willing to otherwise publish on a blog, Enderle says. "The social networking thing is great, but it is also something that has to be monitored closely. Where the next party is going to be is something else than discussions about what your next product will be or that your business isn't hitting its numbers," Enderle says. "It is an easy way to get people talking together, but the issue is to make sure conversations are secure, and social networking was not designed in the first place to be secure."

Smart Battery Life Planning

Battery life continues to represent a weak point for mobile devices. High-powered smartphones drain batteries and do not work as long as they should after a charge. Road warriors have to schlep heavy spare batteries and rechargers for their laptops and other devices when they travel. Researchers have struggled with solving the battery conundrum for decades, but it is unlikely that charge capacities will see any significant boosts in the near future. However, it is possible to improve how charge processes are managed, says Joel Young, CTO and senior vice president of R&D at Digi International (www.digi.com).

One way to maximize the efficiency of battery-power management is to invest in devices that accurately indicate how long they are going to last on a charge; this should apply to any and every device type that an enterprise decides to adopt. "If you know how long your battery is going to last and it is a reliable prediction, then you can plan for recharging," Young says. "You can then better adapt your planning processes. The problem is when batteries go dead when you don't expect them to."

Power Where You Need It

Maintaining Wi-Fi connectivity throughout an enterprise's campus should not pose too much difficulty, provided the wireless routers and access points are strategically placed to allow for adequate coverage. But in practice, on-campus wireless connections are often spotty and might not work where they are needed the most, such as in conference rooms or on users' desks. The problem is often not with the wireless access points but with the electrical outlets that power them. It is thus essential to get the power infrastructure right from the outset.

"You must make sure the electric infrastructure is there up front. It is crucial to have local power for the wireless routers to get the broadcast range you are looking for," says Michael Petrino, vice president of PTS Data Center Solutions (www.ptsdcs.com). "So early on, you need to make sure that power distribution of 120 volts for the entire premise is there so that there is a distribution of power feeds to dedicated outlets for the wireless routers. This is really something you have to get right for the electric infrastructure during the early planning stages."

Best Advice: Know How To Access Information In An Emergency

It is vital that families have a meeting point where everyone in the household knows to go in case of a fire or another home emergency. But enterprises often do not have a similar plan in place for their mobile workers in the event of a disaster, such as when a power failure or an act of God might knock out all communication lines to and from an enterprise's headquarters.

A solution is to establish a place where mobile users can go to find critical information no matter what, such as on an internal Web site. "You need somewhere to find aggregated information," says Robert Enderle, an analyst for the Enderle Group. "There should be a site that every employee knows about where they can go in case of a problem to find out about critical things that relate to their job and their company. Unfortunately, most enterprises haven't given much thought about this."

> **"Having a printer that is self-contained, network-aware, and wireless just gives you a lot more flexibility with where you place it."**
>
> *- Enderle Group's Robert Enderle*

Bringing Together Communications

How To Reap The Benefits Of A Unified Communications System

by Chris A. MacKinnon

IF YOU STOP AND THINK about how mobile communication is affecting the enterprise, you realize just how fast business is happening, especially when unified communications comes into play. Unified communications is the effort to integrate several different forms of communication media so that messages can be transferred back and forth quickly and easily. Plus, with enterprises looking to cut costs, unified communications systems offer one way to reduce travel expenses.

Here are a few words of wisdom from experts that can help you make the most of unifying your communications.

Make It SIP-able

Joel Maloff, senior vice president of sales and marketing at BandTel (www .bandtel.com), says one example of unified communications is the use of SIP trunking as a supplement or replacement for expensive PRI (Primary Rate Interface) or leased line circuits. Maloff explains, "SIP trunking allows enterprises to use their existing Internet connectivity to accommodate voice and data services with cost reductions ranging from 25 to 70% over the status quo."

When it comes to unified communications, Maloff says one of the major factors that must be considered is your current telecommunications system. He asks, "Is it SIP-compliant or is a peripheral device required to connect the systems? Communications traffic patterns are very important. What are the volumes and ratios for incoming and outgoing calls, local, intrastate, interstate, and international? What are the average call lengths? Are toll-free numbers required? Are local telephone numbers in distant cities required that will ring in a central location?" He says all of these factors can then go into the most important issue: How will this improve our business and lower our costs? Maloff says a detailed cost analysis will reveal the tangible value that is available.

Policy Management

Andy Sullivan, product manager of unified communications and collaboration for Quest Software (www.quest.com), says policy management should be at the heart of unified communications. Sullivan says, "Extending an internal unified communications platform to enable communication with the public world quickly introduces new risks of data leakage and compliance violations. Deploying a policy management tool is essential for mitigating these risks and gaining control of who users can communicate with, as well as what issues they are allowed to talk about. Simply opening up the flood gates for external communication will put your organization at risk."

Sullivan says the benefits of deploying items such as VoIP and video for unified communications are attractive, but they can bring their own deployment concerns regarding bandwidth consumption. He notes, "This affects both the user experience of VoIP or video, as well as existing network applications. Utilizing a policy management tool enables deployments to be properly planned, staged, and compartmentalized to account for bandwidth limitations, while enabling functionality for users where the infrastructure can support it."

Sullivan says it's also important to communicate a proper usage policy. He comments, "As new modes of communication are introduced within an organization, it is imperative that users receive education about corporate policies around proper usage." Sullivan says an email or memo containing proper use policy information can easily slip through the cracks, lack the necessary context, or simply be ignored. "By delivering proper usage notifications to the [unified communications client] directly, messages are delivered in the proper context, reminding the user at the desired frequency," Sullivan notes.

Unified Everywhere

Don Smith, CEO of Mitel (www.mitel .com), says it is possible to have many telephony features at a reduced cost. He says that by configuring mobile devices to function like office desk phones, companies can route all mobile-initiated calls through the IP PBX and carry them over their telecom infrastructure. He notes, "This reduces costly cellular long-distance charges; provides employees with full access to their office telephony features such as four-digit dialing, conferencing, and transfer; and ensures only the user's enterprise identity is shared on mobile-initiated calls."

Smith says enterprises can take advantage of software-based IP phones, which extend office calling features and capabilities to mobile workers. He says this opens up the opportunity for employees to telework, reducing their travel times and energy consumption and potentially reducing real estate expenses for the organization. He says softphones also help reduce costs such as off-net calling fees charged by hotels.

According to Smith, enterprise users can also use a technique called "call twinning," which gives users a single phone number that goes everywhere they go, regardless of location or the communications device they are using. Mitel explains, "To do this, users can link their office extension with their mobile phone, home phone, or any device they wish to receive calls on. This improves business productivity by ensuring that callers can reach decision makers at critical times, drives customer responsiveness, and because all voicemail is routed back to the IP PBX, it eliminates the need for users to have or pay for multiple voicemail services."

Back To Basics

BandTel's Maloff says the average data center or IT manager must be concerned with basic unified communications issues, including interoperability, reliability, performance, and information systems security. He says, "Unified communications systems may work wonderfully in a standalone environment, but creating complex systems with multiple components requires intensive testing and proper configuration. Working with your vendors to ensure interoperability and acceptance testing are completed is critical."

Reliability is also critical, according to Maloff. "Managers will want to examine specifications and benchmarks that indicate the relative degree of reliability and performance. It is also important to pay attention to network security. This requires a detailed network security policy and plan that recognizes and addresses the attack vectors that exist in a unified communications world," he explains.

And let's not forget redundancy. As Sullivan explains, ensuring redundancy is integral to unifying your communications. "Once your users have gotten a taste of unified communications, they won't want to work without it, which instantly makes it a business-critical application. Protect yourself and the service through redundant infrastructure in the unified communications platform, as well as the policy and archiving solution. In the world of real-time communication, redundancy that requires administrative interactions is not enough." Sullivan says redundancy must be able to automatically failover and recover without service outages to avoid increases in complaints and call volume. ▣

Key Points

- When implementing unified communications, start by assessing your telecommunications system's traffic and technologies.
- Configuring your mobile devices to function like office desk phones reduces cellular long distance charges, while still providing office telephony features.
- Deploying a policy management tool helps mitigate risks, including data leakage and compliance violation.

Best Advice: Have A Detailed Strategy

You wouldn't begin construction on a house without a carefully drawn blueprint, so why deploy unified communications without a solid strategy in mind?

"Approaching mobility from a strategic point of view opens up a world of opportunities for enterprises to evolve their existing business processes and adopt new ones, strengthening their competitive stance," says Peter Anderholm, senior director for Alcatel-Lucent Unified Communications (www.alcatel-lucent .com). "Practically, it allows them to get a grip on their mobility costs (largely unknown today) and to better support their users through standardization. Indeed, the core of the enterprise mobility strategy must be the users—what they need, profile-by-profile, to work efficiently and effectively on behalf of the organization as a whole."

Cisco Q2 Results Down But Meet Expectations

Cisco Systems reported second quarter year-over-year revenue and net income down in its struggle with the global economic slump. Revenue, at $9.1 billion, dropped 7.5% from Q2 2008; net income dropped 27% to $1.5 billion. Wall Street analysts expected revenue of about $9 billion. Routers were hit hardest, down 23%; video systems grew 18% year-over-year. There was 10 to 20% year-over-year growth in product orders in Mexico, Germany, and Australia, with steep drops in the United States, United Kingdom, Italy, and Russia. Cisco forecasts current-quarter revenue down 15 to 20% from Q3 last year.

Obama Calls For Cybersecurity Review

President Barack Obama nominated Melissa Hathaway, a Bush administration official who led the way in multiagency security improvements, to oversee a comprehensive 60-day review of the U.S. government's cybersecurity infrastructure. The overhaul is intended to assess the current status and future protection of U.S. computer networks. According to a White House statement, the review will initiate and incorporate cybersecurity programs and activities into the private sector and Congress. Other plans originating from White House reports include developing new national security applications, defending companies from cyberspies, and stopping the increasing number of cybercriminals from carrying out attacks.

McAfee Plans Cost Reductions That May Include Layoffs

Security firm McAfee, which recently announced stronger-than-expected fourth-quarter earnings, says it plans to implement cost-cutting measures that may include layoffs in the months to come. Other strategies the company is considering include pay and hiring freezes, facility consolidations, and closing more than two-thirds of recent acquisition Secure Computing's facilities. The cost-cutting moves are in spite of the company's impressive fourth quarter: McAfee's revenues increased by 19% compared to Q4 2007, and its net profit increased from $12.2 million to $45.4 million year over year, a gain of about 273%.

FAA Computers Hacked

The FAA (Federal Aviation Administration) announced that one of its computers was hacked, resulting in the compromise of more than 45,000 employee records. According to a statement released by the FAA, two of the files on the compromised server contained information—including names and Social Security numbers—of employees and retirees of the Administration as of the first week of February 2006. The FAA says it has notified affected employees by mail and is taking steps to investigate the data breach and to prevent future breaches from occurring.

Product Releases

CLIENTS

AMD Phenom II Processors

AMD announced the latest Phenom II processors for its Dragon platform, which include 45nm triple-core processors and three AMD Phenom II quad-core processors. The new processors will fit in AM2+ or AM3 sockets and support DDR2 and DDR3 memory. The platform is designed to allow users to upgrade their components piecemeal instead of being forced to make major hardware changes to whole systems at a time.

Dell Latitude XT2

Dell released the first multitouch tablet PC, the Latitude XT2. Users can implement multiple fingertip movements to take advantage of the Latitude's advanced screen capabilities, including scrolling, rotating, zooming, and panning. The tablet boasts up to about 12 hours of battery life with a 6-cell battery and an optional 6-cell battery slice. Dell has also incorporated an LCD-based wireless antenna, SATA drive support, and a security package featuring Dell ControlVault and ControlPoint Security Manager. DDR3 RAM is expandable up to 5GB, and the Daylight Viewable display creates increased luminance. The Latitude XT2 starts at $2,399.

HP & Citrix HP BladeSystem bc2800 Blade PC & bc2200 Blade PC

HP and Citrix have integrated HP Blade PCs with Citrix XenDesktop 3, resulting in the HP BladeSystem bc2800 Blade PC and HP BladeSystem bc2200 Blade PC, which boost manageability, scalability, and security. The XenDesktop 3 gives the user a high-definition experience and provides centralized desktop management, while the new HP BladeSystems offer advanced infrastructure control and scalability. These machines are designed for interaction with sensitive and business-critical data and offer centralized client virtualization tools from HP to ensure data is protected within the data center. These tools also provide high levels of security and help enterprises meet regulatory standards.

Océ Arizona 350 XT

Océ added the Arizona 350 XT to its Arizona family of flatbed printers. Océ says the 350 XT can operate in continuous imaging mode to output rigid prints up to 49.2 x 98.4 inches, or a standard 4- x 8-foot board. An enterprise can mount two rigid boards of this size on the printer's flatbed table, and as one board prints, an operator can change the other board, increasing net print production. With the Roll Media option, users can print flexible media up to 87 inches wide, and a White Ink Option for nonwhite media prints is also available. The printer outputs at speeds of up to 248 square feet per hour on rigid media and up to 188 square feet per hour via the Roll Media Option. The Arizona 350 XT is expected to be released in Q2.

Sun Microsystems Sun GlassFish Portfolio

Sun Microsystems announced the Sun GlassFish Portfolio, an open-source Web platform based on the GlassFish application server. Built on open-source projects, including Apache Tomcat, Ruby, PHP, Liferay Portal, and GlassFish, the Sun GlassFish Portfolio packages the components into a complete preintegrated and fully tested open-source platform, which delivers increased productivity and a faster time-to-market. Sun's GlassFish Portfolio also provides a range of support and service options for customers, including basic patch services and 24/7 mission-critical support. The GlassFish Portfolio includes the GlassFish Application Server, along with the following components: Sun GlassFish Web Stack, Sun GlassFish Web Space Server, Sun GlassFish ESB (Enterprise Service Bus), and Sun Enterprise Manager.

NETWORKING & VPN

Alcatel-Lucent 7210 Service Access Switch

Alcatel-Lucent announced the 7210 Service Access Switch, a family of small-footprint devices owned by a service provider and designed to extend Carrier Ethernet to enterprises and help operators offer enterprises higher bandwidth services with faster time-to-market and reduced IT costs. Features include fully managed Ethernet and IP VPN services, Alcatel-Lucent SR OS (Service Router Operating System) leverage, and a three-tiered structure that responds to a wide variety of operators.

NCP Secure Entry Client Beta

NCP Engineering announced the beta version of NCP Secure Entry Client, a universal IPSec VPN client for Windows 7. Intended for secure remote network access, the Secure Entry Client is available as a 30-day trial in which users will have full access to the Windows 7 client. The beta version contains the full feature set of Secure Entry Client, including an intuitive GUI, a dynamic personal firewall, data encryption, Friendly Net Detection, and one-time password token and certificate support through a PKI (public key infrastructure). The new client can also be integrated with a NAC (network access control) component for secure access to central data networks.

Voltaire Grid Director 4700

Voltaire released the Grid Director 4700, a 40Gbps InfiniBand director-class switch. When used along with Voltaire's Unified Fabric Manager software, the switch offers performance, scalability, and enterprise-class reliability to bring high-performance

Product Releases

computing into commercial applications and data centers. The Voltaire Grid Director 4700 features 324 ports of 40Gbps InfiniBand connectivity with the option to double the capacity to 648 ports using double-density fabric boards. Double-density fabric boards are the basis for HyperScale architecture, a stackable architecture for building larger configurations into the hundreds and thousands of nodes. The 19U Grid Director 4700 has less than 300-nano-second port-to-port latency to accelerate performance of applications running on server and storage scale-out fabrics. The switch offers ease of use while also serving as a green solution for energy-efficient data centers with its low 6.5W-per-port power consumption.
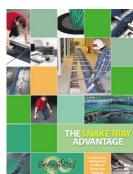
PHYSICAL INFRASTRUCTURE

■ ANSUL AQUASONIC Water-Atomizing Fire Suppression System

ANSUL launched the ANSUL AQUASONIC Water-Atomizing Fire Suppression System, which is ideally suited for extinguishing Class B fires (fires that involve flammable liquids). The offering makes efficient and effective use of water to rapidly suppress fires without harming people or the environment. While utilizing water and nitrogen as the extinguishing agents, the system's patented atomizer nozzle breaks down particles of water into trillions of smaller uniform droplets. The system is also adept at handling flammable liquid storage, insulated and non-insulated combustion turbine enclosures, machinery areas, pump rooms, generators, transformer vaults, gear boxes, and oil pumps and tanks.

■ Snake Tray Mega Snake High Capacity Cable Tray

Snake Tray's Mega Snake high-capacity cable tray is available for installation under floors prior to and independent of installing an access floor. The Mega Snake's floor-mounting system includes support brackets that install in 15 seconds per foot of cable tray, the company says. The package includes a UL-classified grounding connection and premanufactured turns, tees, and crossings that eliminate the need to perform cuttings and clippings. Further, the Mega Snake assembly can be moved and reused, while an accessory rail enables placement near power modules. Moreover, Snake Tray offers the ability to nest trays together for shipping.

SECURITY

■ Finjan Vital Security Secure Web Gateway 9.2

Finjan launched Secure Web Gateway version 9.2 that offers numerous Web-management capabilities via a single administrative GUI. Multilayered Web security protects company data from zero-hour vulnerabilities, Web attacks, code-obfuscation techniques, and drive-by Trojans. DLP (Data Leakage

Prevention) inspects outgoing HTTP/SSL traffic and communication. The applications control prevents the leakage of corporate data by controlling the use of common applications such as instant messaging, Skype, and P2P. Secure Web Gateway 9.2 also includes URL filtering, Web 2.0 control, and secure content caching.

■ Red Condor Email Security Software Version 6.0

Red Condor released version 6.0 of its email security software. The update's new features include the option to filter all outbound email messages to block outbound spam, phishing, and virus attacks; the ability of administrators to monitor and control the number of messages sent per hour, per sender; and the new Admin Dashboard, which allows for more personalized control and additional dashboard content such as historical and current traffic for the appliance cluster.

STORAGE

■ Barracuda Networks Message-Level Backup

Barracuda Networks introduced message-level backup for Microsoft Exchange and Novell GroupWise to the Barracuda Backup Service. With message-level backup functionality, it is possible for the Barracuda Backup Service to connect directly to Microsoft Exchange and Novell GroupWise. This provides individual email backups for more granular restoration of user mailboxes and individual messages. After backup, emails will be stored both offsite and locally to two different geographic locations. Individual emails, entire email folders, or all of the emails for a specific user can all be restored without restoring the entire email server. Restored emails will then be sent back either to the original or an alternate location.

■ Iomega StorCenter Pro ix4-100

Iomega released its StorCenter Pro ix4-100 ($799.95 for 2TB, $1,299.95 for 4TB) NAS Server, a 4-bay desktop appliance with Windows Active Directory support. It can be configured with different levels of RAID support: RAID 5 (preconfigured) and RAID 10 (both with automatic RAID rebuild), or JBOD. Several features of the NAS server include email and SNMP alerts, Gigabit Ethernet, a print server, support for up to three surveillance cameras, and an UPnP AV media server.

■ Unitrends Recovery-300

Unitrends' Recovery-300 provides backup and recovery capabilities for small enterprises. This desktop appliance with a browser-based Rapid Recovery Console can store up to 1.125TB of data from up to 10 client systems (typically servers). It features a quad-core processor, 4GB of memory, and four 1.5TB drives arranged in a RAID 10 configuration. The compact unit supports more than 40 OSes. Pricing starts at less than $4,500.

OPINIONS
INFO-TECH • INSIGHT

Economic Downturn: Challenge Or Opportunity?

When the economy takes a turn for the worse, IT is often the target of budget and staffing cuts, regardless of the negative impact the cuts may have on projects or service levels. With the nature of the cuts out of IT's control, how can you continue to be effective or innovative?

Although economic conditions are challenging, they can also be a catalyst for change. What things would you change given that you may have to function with 20% less budget and staffing? Where would you ask to spend some money so that the cuts have less of an impact on services and service levels? Where do you need to put in some extra effort to make a process or functional area work better?

Question The Status Quo

When fundamental business changes occur, it's a tremendous opportunity to question the status quo. The following are some key questions you might ask.

Is IT a business enabler empowering users with the applications and information they need to run the business? Or does IT develop systems that require IT or user effort on a regular basis to produce the data necessary for business decisions?

Are IT systems, processes, and staffing agile? Can information and data from disparate systems be quickly disseminated into a single view of information most necessary to the business? Is IT cross-trained, empowered, and sufficiently motivated to react to opportunities and to see new ways of providing key business services? Does IT support flexible hours and working arrangements to allow for better work and home life balance? Is there a regular and open dialogue among the IT team about the challenges they face and how to meet them?

Is IT customer-focused? Does the team understand who their customers are and what's important to them? What services does IT need to provide to the business, and are they being addressed? And are there appropriate metrics and measures in place to ensure that the right things are happening?

Are basic systems and services reliable and available? Have you defined what reliable and available mean in business terms?

Pushing The Right Buttons

When IT spending hits a brick wall and most projects are canceled or severely curtailed, what's left? There are a few areas you can look at for improvement opportunity clues. For instance, the help desk is a wealth of potential information about how well IT is servicing the business. What is your help desk telling you? Do users have a problematic application, infrastructure issues, or unreliable PCs? Or are users just insufficiently trained? IT must take corrective action to break the cycle of issues and incidents and fix a problem's root cause if they are to be effective in a challenging economy.

Examine what tools and processes IT uses to do its job. Could a little investment eliminate a repetitive and error prone task?

RUSS CONWATH

AUTHOR

Russell Conwath is a senior research analyst at Info-Tech Research Group and has spent more than 20 years in IT. Conwath has experience in software and hardware development, systems and software implementation, IT remediation, and senior technology management in a number of industries, as well as in independent technology and business consulting.

Here are some simple tools that would really help IT:

• PC remote-control software for the help desk can significantly reduce the time required to help a user. It's available as a low-cost software-as-a-service and can be deployed immediately.

• System-monitoring software is available free and can significantly reduce outages by notifying IT of potential issues.

• Disk-imaging software can significantly reduce help desk calls by ensuring that a validated configuration is consistently deployed.

Identify what information the business needs to be successful and deliver that information in a timely and accurate manner. Does the business know what information it has? Are you producing any data that no one uses? Enable the business users to get the information they need when and how they want it. Transform your users into knowledge workers who can then identify that next product, service, or customer opportunity.

Money, Schmoney

Whenever I've taken on a new IT management or consulting role, I have asked my team to spend some extra time fixing the root cause issues. I gave them time off in lieu, offered flex hours, paid for lunch or dinner out of my pocket, and fed their inner curiosity with technology sandboxes. It paid off in significantly reduced help desk issues, improved team morale, and produced much greater user satisfaction. With the systems stable, we were able to focus on the business needs.

There are free or low-cost solutions for just about any business need out there. Though you may spend time implementing them, the availability of free or cheap software and hardware should allow you to meet key business needs, even during tough economic times.

Bad economic times can offer just the right kick in the pants to make fundamental changes in how IT delivers. If you're challenged by budget cuts, be open to significant change. P

Send your comments to infotech@processor.com

Energy-Efficient Rebates

Will Saving The Planet Also Save Your Bottom Line?

by George Crump

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WHY WOULD A COMPANY PROVIDE incentives for you to use less of its product? But that's basically what energy companies are doing when they provide a rebate or other form of incentive to help you drive down your electricity consumption.

"Actually, the reasons are more than 'It's the right thing to do,'" says Mark Bramfitt, principal program manager at PG&E (Pacific Gas and Electric Company). "While that is a big part of it, there is significant cost savings in helping our customers be more energy efficient." Bramfitt indicates that the cost of acquiring more electrical power—or worse, the cost of building a new power plant—are more expensive than helping customers reduce their consumption. As a result, providing incentives for customers to lower their electric bills is a very popular idea.

Data Centers Enter The Fold

For PG&E and many electric companies, providing incentives to reduce power consumption is nothing new. Well-established utilities have had energy-efficiency programs in place for decades. What's new is the inclusion of data centers in those programs.

The data center is an important target for reduction of energy consumption. For example, a study by Stanford University estimates that data center energy use represents 1.2% of electric energy use nationwide. But globally, less than a fifth of the population is currently accessing IT services.

According to Bramfitt, PG&E's definition of an enterprise data center is one that is operated by Web-based, financial services, high-tech, and colocation companies. Bramfitt says that these centers can be standalone or part of a campus environment, and their consumption loads are in the tens of megawatts; some individual centers approach 100MW. For some of these customers, energy use is second only to employee costs.

Additionally, data center annual growth rate can be upwards of 50%. SMEs' data centers tend to be smaller (5,000 to 20,000 square feet) and are usually part of an office complex. Growth rates are usually some low multiple of GDP—10% annually, for example.

Plan For Success (& Savings)

Typically, energy-efficiency programs focus on new data center construction, retrofitting the current environment, or optimization of the equipment in the data center. As an example, under the PG&E program, when an enterprise is set to start new construction, it brings in its plans, and PG&E brings in the appropriate engineering talent to see how they can design in greater power efficiency. In some instances, PG&E will help provide funding to cover some of the costs, so be sure to check with your provider to see if similar options are available.

Bramfitt uses the example of helping a local company design its new data center. The project generated a $1.4 million cost savings in electrical consumption. The company used free cooling and high-efficiency UPSes. Free cooling is an economic method of using low external air temperatures to assist in chilling the data center. For example, when the ambient air temperature drops to a set temperature, the free cooling system uses the outside air to cool the data center.

But for SMEs with no plans for new data centers, seek out aggressive programs that center around optimizing the current data center. PG&E, for example, endorses server virtualization and storage consolidation as targets to improve energy efficiency. PG&E realized that it was ignoring the "white room," focusing on high-efficiency equipment (chillers, pumps, fans, etc.) and air- and water-side economizers (free cooling). Based on a joint study conducted by PG&E and Lawrence Berkeley National Laboratory, more than 55% of the power consumption was coming from servers and data equipment.

Michael O'Malley, director of analyst relations and market intelligence at VMware (www.vmware.com), confirms that the program is making a difference. "We have seen high interest from customers to start or even accelerate their virtualization strategies as a result of data center-focused energy-efficiency programs. It allows them to further justify a server virtualization project and expand its scope, while of course driving down data center power and cooling costs."

Craig Nunes, vice president of marketing for 3PAR (www.3par.com), says that the programs are working. He says that a particular client was able to shut down 25 servers and migrate away from 17 NAS servers. The result of these server and storage virtualization endeavors reduced the client's power consumption by 26%.

"Customer interest in programs like these remain very high," Nunes says.

What You Can Do

Bramfitt suggests accelerating server virtualization projects. Server virtualization can commonly consolidate 10 or more servers into a single server; doing so naturally reduces power consumption and space requirements. It can also delay the need for a new data center. In addition, storage optimization techniques, such as thin provisioning and the use of MAID (Massive Array of Idle Disks) storage, are also eligible for the incentives. Although the rebates will vary, there is essentially an incentive for every server that is removed. In addition to these, there are incentives for airflow control systems and high-efficiency UPSes.

There are also incentives for the desktop IT environment. Consider purchasing Energy Star PCs, monitors, etc. Beyond that, look for incentives for the use of power-management software or converting from desktops to thin-client systems.

More than 100 utility companies have incentive programs, and many of these are now including data center incentives. For example, the Utility IT EE Coalition comprises utilities in the Pacific Northwest, but the inclusion of companies from Texas and Vermont suggests that the group is expanding nationally. It is worth your time to contact your provider and see what programs they have for a data center of your size. ▣

Solid-State Drives: Additional Rebates Could Be Coming

SSD storage has often been known and used for high performance. According to Woody Hutsell, vice president of Texas Memory Systems (www.texmemsys.com), "SSD is now being looked at for its green capabilities. If you measure the I/O per watt of SSD technology, it is far superior to that of mechanical drives."

In a performance-sensitive environment, customers will add drives to an array to increase response time, even though the existing drives in the array are not even close to capacity limits.

Adding drives for performance increases power consumption and heat while decreasing available floor space. A single SSD can often replace all of these drives, reducing overall power consumption while improving performance.

If other utility companies follow PG&E's lead, using SSDs could net you additional rebates. "For 2009, we will be looking at adding solid-state disks to the [incentive] program," says Mark Bramfitt, principal program manager at PG&E. "We think that will help further drive down costs."

RIM Acquires Certicom For $106.5 Million

Security software company Certicom agreed to be bought by Research in Motion for $106.5 million, rejecting a lower bid from VeriSign and ending weeks-long negotiations. RIM began its hostile takeover bid for Certicom in December, but Certicom held out for a higher offer, which it received from VeriSign, an Internet security provider. The deal comes after RIM doubled its initial bid in response to VeriSign's counter-offer. Certicom is a developer of elliptic curve cryptography, which RIM uses in many of its BlackBerry security operations. The deal was approved Feb. 10, but neither company has stated when it will be finalized.

Microsoft Responds To Windows 7 UAC Concerns

After concerns arose in beta testing, Microsoft will change the User Account Control feature in Windows 7. Microsoft was criticized for the "intrusive" UAC feature of Vista, which provided several prompts, so it decided to simplify the feature in Windows 7. However, the problem is that the UAC auto-elevates the application with no prompt at all. Concerns show hackers can utilize one of many preapproved applications to trick Windows 7 into allowing malicious payload complete administrative rights. Microsoft is responding by designing Windows 7 to prompt users when making an attempt to change the UAC settings.

Senate Approves Modified H-1B Bill

The U.S. Senate passed a modified H-1B amendment, which enforces strict conditions on enterprises receiving bailout money that hire people with H-1B visas. The original bill, proposed by U.S. Senators Bernie Sanders and Chuck Grassley, required a complete ban on H-1B hiring by enterprises that would have received aid from the TARP (Troubled Assets Relief Program). The modified version requires these enterprises to be an "H-1B dependent company." Grassley explains that the restrictions demand the employer actively recruit American workers; not displace American workers with H-1B visa holders; and not replace laid off American workers with foreign workers.

AMD Reschedules The Foundry Co. Vote

Advanced Micro Devices was forced to reschedule its vote on the spinoff of its manufacturing to The Foundry Co. At the Feb. 10 shareholder meeting, just 42% of the shares had voted, of which 97% were in favor of the move. A majority of shares need to approve or reject The Foundry Co. deal, which would give AMD ownership of 34.2% of the company (down from the original 44.4% stake prior to AMD's stock depreciation). AMD plans to give shareholders until Feb. 18 to weigh the venture and vote again. If the deal gets the go-ahead, The Foundry Co. will be majority-owned by an Abu Dhabi-based investment firm.

Networking Woes

Outlook Good For Managed Service Providers

Based on a recent study from AMI Partners, it seems the current economic climate has helped managed service providers. The research firm indicates that U.S channel partners are predicting that revenue for managed service provider options will grow by 20% over the next 12 months. The study found that the value-added services from managed service providers, such as network monitoring, remote data backup, and network security options, make economic sense for both U.S. channel partners and manufacturers.

20%

According to the study, one in every three U.S. channel partners provides some type of managed service offering. AMI Partners indicates that, on average, managed service provider offerings yield 41% margins on sales of IT services, 36% on Internet services, and 35% on custom software development. According to Avinash Arun, senior analyst at AMI, "If you compare the margins of U.S. channel providers for comparative sales of computing and networking hardware, the revenue is about 50% less." As a sales model, the managed service provider tools are sold similar to the system of selling razors and razor blades: Channel partners can bundle higher-value services, such as systems management, support, and training, to add on to the basic service.

Driving The Success

According to AMI, 67% of SMEs are expecting decreased revenues in the months to come, and 66% expect to restrict cash flows during that time, as well. However, half of the companies surveyed say they plan to look for ways to use technology to reduce costs and improve efficiency, as well as productivity. The cost-effective options offered by managed service providers can also help a company's productivity because the channel partner typically specializes in the service, such as remote data backups or VoIP. Ryan Brock, vice president of channels at AMI, notes that "IT administrators will want to target the most competent channel partners and managed service provider offerings to win in the early stages of the evolving managed and hosting solution market."

AMI Partners notes that unified communication, which includes instant messaging, social networking, VoIP, Web conferencing, and videoconferencing, will be one of the key cost-cutting measures taken by SMEs because it allows enterprises to cut travel costs. Overall, the study found that enterprises are investing in IT solutions that provide options for immediate cost reduction or revenue-generating potential rather than options that provide incremental performance improvements.

by Nathan Lake

More Bandwidth Isn't Always The Answer

by Drew Robb

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WHEN A NETWORKING PROBLEM OCCURS, the answer is easy. Throw more bandwidth at the problem, right? Unfortunately, that doesn't always lead to a resolution.

"Many companies experience performance issues that on the surface appear to be bandwidth-related, but may actually be tied to poor application performance, improper network design, or suboptimal bandwidth utilization," says Michael Hall, a network solutions architect at CDW (www.cdw.com). "Often, the hasty response to these issues is to add bandwidth, which in many cases does nothing but increase cost."

One example is application slowness on what could be mistaken for a sluggish network. Instead of making the lazy assumption that bandwidth should be added, the issue could be with server performance or something else. Providing more bandwidth will obviously speed up a network, but it might not solve an issue with a router or server. In some cases, purchasing an application server may provide greater gains than adding a fatter pipe. So how do you decide what to do?

What's The Diagnosis?

The first place to start is with a diagnosis, which should be done using a network analyzer. Take the case of those common bandwidth hogs, VoIP and Unified Communications.

"IT managers anticipate that the addition of VoIP will increase their bandwidth

buggy. The best approach is some form of predeployment assessment using a network analyzer or another type of network tool. This assessment allows you to prepare your network ahead of time for the added traffic without surprises.

"By conducting a predeployment assessment of the network, SMEs will better identify and resolve obstacles that would get in the way during implementation and create performance baselines that can be used to evaluate post-deploy-ment success," says Brown. "Predeployment assessments present a great op-portunity to discuss expectations with managers and plan appropriately for long-term network growth. All of this is much easier to do prior to deployment, rather than after the fact."

No Need For Probes

A thorough diagnosis of the network prior to buying more bandwidth is key. A proper diagnosis might show any number of issues: misconfiguration, bandwidth abuse, hardware/software failures, or no problem at all.

For those who don't already have sophisticated monitoring systems in place and are unwilling to pay the price for network probes, there are ways to find out what is going on without breaking the budget.

Network analyzers can help you keep tabs on your network's performance by providing a graphical analysis of your systems.

to enterprise-class products and are supported widely by the vendor community. SNMP is another easy and cheap way to monitor devices attached to the network. It provides plenty of valuable information, has been around for a long time, and is supported in almost all business level network devices.

Using Netflow, for example, Duran gives the example of an SME that noticed unusually high network utilization at a remote location. A Netflow analyzer isolated three IP addresses that were responsible for doubling bandwidth utilization. They were running online backups of their laptops during business hours. Once the problem was found, the company put a stop to this practice immediately.

Optimizing The WAN For Remote Users

Many user complaints are about problems in the field when they tried to connect to the SME's file server over the Internet, attempted to access the database from hundreds of miles away, or tried to open and run an important business application remotely. If it took ages to open a document, access an application, or view a database record, then the issue might be addressable with WAN acceleration.

Instead of expanding the amount of network presence, this technology seeks to optimize the way the existing network is being used. This is accomplished by such techniques as compressing the traffic that is crossing the WAN, caching and accelerating the applications involved by improving their performance.

"When diagnosing WAN performance issues, many companies find that improving or optimizing the way they use their WAN links can result in a performance increase of 70% or more without adding bandwidth," says Hall. "WAN optimization products use a number of different strategies, the most common being caching and compression. These WAN optimization products are great for companies with branch offices or mobile users and exhibit a short ROI timeframe due to increases in productivity or reduction in bandwidth requirements." P

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>
> *- CDW's Michael Hall*

needs and, as a result, automatically upgrade their bandwidth capacity," says Stephen Brown, product marketing manager at Network Instruments (www.netinst.com). "The increase in bandwidth may waste money without addressing the issue causing the VoIP problems."

VoIP, then, isn't the type of technology that network managers should attempt to implement without doing a little legwork up front. A good network analyzer, a test environment, and a gradual implementation will help SMEs to locate the actual bottlenecks and take appropriate action. By understanding the current bandwidth load and existing network and application demands via a network analysis, you can determine the exact cause of slowdowns and embark upon an effective resolution.

"Long-term application performance monitoring and trending is critical for establishing baselines of normal network performance," says Brown. "You should rely on your network analyzer daily, rather than pulling it off the shelf only during an emergency."

Predeployment Assessment

Many people only discover unexpected bottlenecks after the fact. That's a sign of bad planning and results in such things as CRM (customer relationship management) systems that have absorbed vast amounts of bandwidth yet still remain

"There are many different ways to diagnose these issues," says Raul Duran, field engineer for Plixer (www.plixer.com), which makes network management tools. "Netflow or sFlow analyzers offer great visibility into network traffic without the need for probes, so they are easy to implement."

SMEs, then, don't need to worry about having to spend a year's budget for enterprise-level network monitoring tools to be able to diagnose network problems. According to Duran, there are quite a few programs offered free that can do the job. Although the IT administrator might not get all the tools they want from a free version, it's certainly a start. And, in general, even sophisticated Netflow and sFlow tools are relatively inexpensive compared

Network Troubleshooting Tips

Networks are hard enough to manage even when they're running well. These tips will help you keep your network running at its best.

- Keep an open mind. Don't immediately assume that the network is the problem.

- Diagnose the problem using a network analyzer or Netflow/sFlow analysis tool.

- If you don't have analysis tools already, you can find free tools online to help you diagnose problems.

- WAN acceleration technology can speed access for remote users.

How To

Plan For A New Data Center

Key Points

The new paradigm in data center metrics is shifting from square footage to capacity in megawatts. With advances in blade servers and virtualization, it is now possible to pack more computing power into a data center footprint than ever before.

Technologies & Practices To Consider Before You Begin

by Sandra Kay Miller

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QUESTION: WHAT DO CITIBANK, HP, Facebook, Microsoft, Google, AT&T, and Wachovia have in common?

Answer: They are all building new state-of-the-art data centers.

Instead of retrofitting existing data centers, these companies have chosen to embark on projects with price tags in excess of $400 million each. According to Gartner Research, one of the primary factors for this trend boils down to energy.

Data center energy consumption doubled between 2000 and 2006. By 2010, the incremental demand for data center energy will equate to 10 new power plants. Driving the need for new data centers is the expectancy of 90% of organizations with existing data centers to require more power and cooling capacity within the next 30 months.

At the same time, Uptime Institute estimates that data center facility costs are outstripping IT spending by as much as 14%. This unsustainable model is resulting in companies investing in new data centers capable of delivering computing environments in a cost-effective manner.

From conception to bringing a new data center online, organizations need to mandate efficiency levels throughout the facility, operations, and the infrastructure.

It's All About Energy

The choice to build a new data center often boils down to energy. Whether it is the increased power needed to run blade servers hosting virtualized environments or the additional HVAC capacity to maintain optimal temperatures within the physical building, the limiting factor in data centers today is energy, not space.

"If you think about the challenges that data centers are faced with today, they are far more likely to become power constrained than they are to become space constrained. You run out of power way ahead of running out of space," says Mike Manos, general manager of data center services at Microsoft, who is responsible for the design, construction, and operation of all Microsoft data centers. Manos also explains that in terms of square footage, the real estate costs are only a fraction—2 to 3%—of the total price tag of a new data center. The majority of expenses—between 80 and 85%—are tied directly to the mechanical and electrical systems.

Ken Brill, executive director at Uptime Institute (www.uptimeinstitute.org), agrees: "Construction cost is driven by IT hardware

Additionally, new data centers are beginning to measure capacity and performance in terms of PUE (power usage effectiveness), which is a metric created by the Green Grid (www.thegreengrid.org), which promotes the adoption of energy-efficient standards, processes, measurement, and technologies within data centers. The PUE is based on the simple equation of the total amount of energy the data center utilizes divided by the energy IT equipment uses. The closer that number is to one, the more efficient the data center. The Uptime Institute estimates most current data centers operate around 2.5.

Easy Targets

The primary focus on building new data centers today is to increase efficiency while reducing operating costs. Blade servers, multicore processors, virtualization, liquid-cooled racks, smart power configurations, and hot/cold aisles in the server room layout have all been introduced into data centers

> **Data center energy consumption doubled between 2000 and 2006.**

power consumption, not the size of the computer room. Reducing IT hardware power consumption will convert directly into a less expensive data center."

Before building a new data center, companies should consider instituting a new metric for determining the capacity of the data center. "At Microsoft, we normalize everything on power. We measure our data centers in terms of the power available—both critical and total load. We also factor in cooling since it, too, is based upon power," says Manos. He explains that the cost to build a data center today, depending on the redundancy level or uptime tier, can be between $15 million and $30 million per megawatt of critical load being delivered.

over the last several years to increase overall performance and efficiency. However, data center architects have begun implementing simple yet highly effective facilities design features that are adding significant overall energy savings.

Air-side economizing has been responsible for companies choosing to build new data centers in locations with temperate climates. By using outside air to aid in the cooling of the data center, there is lesser need for power to operate mechanical chillers to produce cool air, thus reducing overall energy consumption. Even small things can have an overall impact on the efficiency of the data center. For instance, a white roof will reflect more heat than a dark-colored roof.

Brill explains that there can be significant reductions in IT hardware consumption with little or no premium if IT procurement is instructed to calculate lifecycle costs to include facility capital and operating expenditures. "IT procurement typically looks only at performance and the initial cost when buying hardware. Bringing total cost

of ownership into procurement decisions would require measuring and incenting watt reduction much like dollar reductions," he says. For example, saving 50 watts of power is worth a minimum of $280 over three years in electricity alone. For a Tier II facility, a minimum of $1,400 in facility capital expenditure would be avoided. That figure would double for Tier IV.

Additionally, data centers can squeeze an additional 20 to 30% out of expenditures by intelligently equipping hardware. Brill points to simple things, such as right-sizing memory, which can reduce energy consumption and acquisition costs. "When you buy power supplies within your servers, you need to compare efficiencies at 10% load, not at 80 to 90% load, because most hardware will run lightly loaded due to power supply capacity over-provisioning and redundancy," he says.

Besides facilities and infrastructure, building a new data center should also include a comprehensive management and monitoring plan. "We aggressively manage our data centers to be highly efficient. If you can get really good at managing your efficiency by understanding the electrical and mechanical loads of your facility, you can drive the overall efficiency of that facility up to a 90% safety margin and potentially beyond. This offers significant financial benefits," says Manos. He explains that for a $200 million investment in a new data center, 85% of the costs would be wrapped up in the mechanical and electrical systems. "Every watt of energy that you can bring to bear for some level of useful work has measurable value to the business. The data center industry as a whole needs to make the business side understand the dynamics of operational metrics."

Metrics are poised to become increasingly critical as regulatory agencies are recognizing the amount of greenhouse gases emitted from existing data centers. The EPA has already begun to standardize methods to measure, document, and implement energy efficiency within data centers. Although there are many things that can be done to improve the overall efficiency of a new data center to increase the company's profits through the reduction of operating costs, it will also become necessary to assign a factual metric to the success of a company's endeavors. ▪

TOP TIPS

- Knowing the financial breakdown of capital expenditures and operating expenditures in IT delivers the highest return for the entire organization

- Leading-edge technologies and methodologies let data centers stay ahead of obsolescence

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SIX QUICK TIPS

Tips For Taming Cabinet Chaos

Server Cabinet Organization Is Essential For An Efficient Data Center

by Christian Perry

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IF YOUR SERVER CABINETS make a dense Peruvian jungle look neat and tidy, you're not alone. Mired within the constant loop of adding and removing components, many data centers eventually grow careless with cabinet organization, in turn creating environments that are frightfully unfavorable for their equipment. If this situation describes your data center, these tips can get you back on track.

Know How To Stack Your Rack

Although it's possible to neatly organize server cabinets regardless of what goes in them, there exists a precise science to how the equipment should be situated in the cabinet. According to Richard McCormack, senior vice president of marketing at Fujitsu (www.computers.us .fujitsu.com), hot, heavy equipment such as UPSes, power supplies, and powerful and heavy servers should be placed on the bottom of cabinets.

"The basic rule of thumb is for servers larger than 4U to be put at the bottom of racks, followed by 2U servers, with 1U servers on top," McCormack says. "Next, be sure to account for application loadings in racks, too—put highly loaded servers and storage at the bottom, lightly loaded systems on top. Then, network gear should sit either in the middle—for optimal cable management and shorter cable lengths—or at the top of a rack for top-down data centers."

McCormack adds that KVM switches should be situated in the middle for easy access and ergonomics, while power strips and network gear should be in "cubbies" on the sides of the cabinets to reduce cable management problems. Further, rack dummy panels should be installed to avoid hot-aisle/cold-aisle contamination and ensure good internal rack ventilation and airflow. David Layton, senior vice president of colocation operations for Terremark's (www.terremark.com) west region, agrees, noting that dummy or blanking panels can be created by simply cutting black poster board to fit. Such panels are affordable, look like metal, are easy to adjust as devices are installed and removed, and can provide big temperature drops in the cold aisles.

Identify With Labels

Jason Hernandez, a product specialist with CableOrganizer.com, explains that the easiest way to keep cabinets organized is to do it right the first time. This includes labeling everything so that the installer or next administrator can easily identify components.

"This can be done by color-coding wires or using clearly identifiable labels. If there is shorthand used on labels or color-coding, then a legend must be easily accessible in the server room, either on an outside panel or on an opposite wall if the server is to be kept totally clean," Hernandez says.

He adds that temporary labeling can be useful for new equipment when there's not a permanent spot for it from the start. When time and space permits for proper movement and installation in the future, these temporary labels can provide efficient direction.

Don't Restart From Scratch

As cabinets grow more unruly over time, data center personnel might be tempted to perform complete cabinet reorganizations to get things back on track. But experts recommend avoiding that tactic, as it could cause far more problems than it could potentially solve.

"Cabinet strategy should not occur randomly and in a vacuum," says Tom Deaderick, director of business development for OnePartner (www.onepartner.com). "Cabinets are one of many components that make up the data center environment. Affecting any one component introduces the risk of impact to others, or even the entire environment. All facets of the data center, including cabinets, should be incorporated into the design and only modified if a technology shift makes that action unavoidable."

Instead, Terremark's Layton recommends regularly going through aisles and ensuring any changes have not impacted equipment, searching for gaps and closing any that are found, and checking airflow and supply temperatures and relocating or adjusting devices and supply air diffusers as needed.

"Environments where there is a steady churn of equipment—engineering, test and development, QA, etc.—will take care of their own reorganization, or lack thereof, automatically. It pays to remember that change is not conducive to establishing and maintaining a 24/7 production environment,

Best Time-Saver:

Keep Wires Under Control

Wire management is crucial to cabinet organization, and there are plenty of philosophies for handling wires. Jason Hernandez, product specialist with CableOrganizer.com, recommends tailoring wire management to the particular cabinet infrastructure.

"There are lots of big, hulking vertical cable managers that look really great when fully loaded but can cost nearly as much as the rack it's mounted on. If the rack is being used as a patch panel and switch point primarily, then these types of vertical managers may be helpful with wire bundles in the upper 100s," Hernandez says. "For combo server/switch/patch applications where the wire bundle load is less, loops or cable ties could be used since they won't have the massive weight and bulk of that many cables. Horizontal management running between patch panels and switches helps keep the front of the rack looking neat and keeps those patch cords untangled and easy to trace back from point to point."

Best Return On Investment:

Treat Cables With Care

By their very nature, cables are prone to suffering punctures and other damage that can not only ruin the cables themselves, but also negatively impact the servers and other components to which they're connected. But that damage can be avoided.

"Avoid dressing cabling tightly over sharp edges of railings or panels," advises Richard McCormack, senior vice president of marketing at Fujitsu (www.computers.us.fujitsu .com). "Take care not to pinch cables between components and avoid bending them as much as possible. Cables should never be bent tight enough to cause a crease in their sheaths. Fiber cables must not violate their minimum bend radius. When securing cables inside the rack with cable ties or the new, less-abrasive Velcro-based alternatives, we recommend dressing the bundles in such a way as to avoid interference with installed components or rack-side panels or rails."

and all changes, such as replacing equipment or adding new gear, have to be planned to mitigate downtime exposures within the existing infrastructure," McCormack says.

Save Reshuffling For A More Practical Time

According to Hernandez, the installation of new equipment doesn't often occur when it is practical to reshuffle half a cabinet's worth of equipment up or down or over to a new rack, particularly when the new equipment needs to be implemented quickly.

"Save the restructure for a holiday weekend, when things can be done right and with extra equipment like patch cords or possibly an extra panel or switch," he says. "Something always seems to go wrong when things get moved around. Without a proper backup and parts, a simple task can turn into a nightmare."

Hernandez also warns against "Frankenstein"-style additions, which occur when someone inserts a patch panel or switch into an open spot on a rack in a place that doesn't make sense. This can happen more than once as growth occurs, and it can force wires to be run from one cabinet to another in a haphazard manner. ▣

BONUS TIPS

■ **Don't skimp; don't rush.** Jason Hernandez, product specialist with CableOrganizer .com, warns that if cabinet organization is rushed or if insufficient funds are spent on necessary supplies, data centers will pay the price later. "Paying a bit more up front will save time and money in the long run when something has to be reworked for no good reason other than lazy or cheap

installations. Also, don't rush in. Have an installation plan, and if time and space permits, have a plan for future growth," he says.

■ **Create guidelines.** According to Tom Deaderick, director of business development for OnePartner (www.onepartner.com), it's a good idea to create guidelines that data center personnel can follow when it's time

to integrate new cabinet equipment. He recommends that managers cover multiple areas in the guidelines, including a schedule for deployment and decommissioning, quality-assurance planning, staging and acclamation areas, a prework checklist, electrical considerations, thermal dynamic impact, and access for maintenance and servicing.

LG Tightens Its Belt

South Korea-based LG Electronics announced plans to save $2.2 billion, or 30% in overhead and annual costs, by reorganizing global production bases and appointing a Crisis War Room unit tasked with directing cost-cutting initiatives. The company hasn't announced job cuts, but it says it may be forced to reduce its 82,000-strong workforce in the future. The news follows a $487 million loss for the fourth quarter because of weakened demand for LG's mobile phones, flat-panel TVs, and appliances.

Qwest Profits Down, But Less Than Expected

Denver-based Qwest Communications, a telecommunications and broadband Internet service provider, reported a 49% decline in fourth-quarter profits to $185 million, compared to the previous year's profits of $366 million. The losses include a penny-per-share charge for severance payments distributed to more than 1,200 laid-off workers. The company still plans to lay off another 500 workers to meet its cost-cutting goals. Despite the decline, revenue was only down 3%, and earnings beat Wall Street estimates. Qwest lost 219,000 landlines for the quarter but gained 54,000 broadband subscribers. Qwest stock was up 8 cents on the announcement.

RIM & Ontario Commission Reach Settlement

The Ontario Securities and Exchange Commission and Research In Motion co-CEOs Jim Balsillie and Mike Lazaridis have reached a settlement in the case that initially sought an $80 million fine to RIM for backdating that

allegedly lasted about 10 years. The Black-Berry co-CEOs were charged with backdating in 2007 after the Commission learned that about 40% of RIM's stock options granted since 2006 had been backdated. It reportedly cost RIM $45 million to investigate the allegations, which uncovered that both CEOs earned about $1.6 million after acquiring 2 million backdated shares each.

Psystar Can Continue Countersuit Against Apple

Psystar can carry on with its countersuit against Apple, says U.S. District Court Judge William Alsup. Alsup also says that if Psystar, which cloned the Mac OS, verifies its allegations against the Mac maker, other manufacturers may also be able to sell computers with Mac OS X. Psystar originally charged that Apple is guilty of breaking antitrust laws but might instead argue that Apple has broadened copyright laws by chaining the Mac OS to Apple hardware. In November 2008, Alsup dismissed Psystar's antitrust allegations but said Psystar could still bring a modified suit against Apple.

RIM Estimates Lower Profits

Research In Motion forecasted that its profit margin will be at the low end of what had been predicted. In December, the BlackBerry maker estimated quarterly revenue of $3.3 billion to $3.5 billion, with earnings of 83 cents to 91 cents a share. Stock surged because both were above Wall Street's estimates at the time. But now, businesses are not buying RIM's latest smartphone upgrades. RIM shares dropped more than 15% after it issued the announcement.

WHAT'S HAPPENING

Beyond Spam

Barracuda Networks' Security Appliance Portfolio Meets Companies' Needs Worldwide

by Holly Dolezalek

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NOT EVERY COMPANY can say that it got its start in spam. But security vendor Barracuda Networks can, because the first product it offered to the market was a way to prevent spam.

Barracuda Networks (888/268-4772; www.barracudanetworks.com) was founded as a privately held company in 2002 and shipped its first product in July 2003. According to Vice President of Product Management Stephen Pao, spam was at its height in 2003, and there were plenty of Silicon Valley companies that were making a living by selling high-end spam filtering software or hardware to companies that always needed it, such as financial companies, defense contractors, energy companies, and telecommunications providers. There were also desktop security solutions, but there wasn't anything in between for companies that needed to protect themselves from spam.

"If you were a company with 250 to 500 employees or a typical data center, you weren't going to buy the expensive, complex products that were targeted at the elite, but you needed more than what [consumer security vendors] offered at the time," Pao says. "We wanted to offer a product for everyone else."

Barracuda Networks' first product was its spam firewall, an appliance with integrated software to protect email servers from spam. From those beginnings, Barracuda has expanded its suite to offer security appliances for message archiving, Web filtering and site security, load and link balancing, and an IM firewall. Each of the company's nine product lines includes several models with different prices and user capacities. For example, the simplest spam firewall is a 50-user appliance for $699, but there are seven other models, and the largest can accommodate 100,000 users.

Barracuda also offers backup services, which combine an onsite appliance with a monthly subscription to offsite data storage.

Business Worldwide

With more than 70,000 customers in more than 80 countries, Barracuda is reasonably broad-based, and because spam is ubiquitous, the company is finding business in every vertical market. It sells its products through a network of 3,300 resellers. "The small and medium-sized business

market is where we get most of our notoriety, but we've extended that to other markets, like K-12, higher education, government institutions, and the ISP arena," Pao says.

About 70% of Barracuda's business comes from the North American region, with the bulk of the remaining 30% coming from Europe, China, and Japan. Pao explains Barracuda's customers in the rest of the world are more likely to be large enterprises than in the United States, partially because those companies are more accustomed to buying from resellers than U.S. companies are.

"For each of our product lines, the international growth rate is far higher than in North America, so that's a real area of opportunity for us," Pao says.

Barracuda now has slightly more than 500 employees, most of whom are employed at the company's headquarters in Campbell, Calif. The rest are at R&D facilities in Ann Arbor, Mich., and Carlisle, Pa.; sales offices in Fresno, Calif.; and international sales offices in such countries as the UK, Japan, Australia, India, and China.

Scaling Up

A rapidly growing company has to scale its functions effectively, and Barracuda defines rapid: 70,000 customers in less than 10 years has meant a lot of expansion in many ways. Barracuda has had to refine its manufacturing capabilities and its technical support to keep existing customers satisfied. "We recognized early that we would be volume business, and you have to generate a lot of volume to be a price leader in that kind of business," Pao explains. "So we developed manufacturing as core competency, and we also made early investments in information systems to support our manufacturing process."

Conducting its own manufacturing has been essential, Pao says, because the company didn't want to put its manufacturing in the hands of another company. "We didn't want to outsource to external providers whose business doesn't grow when our needs grow," he says.

Barracuda has its challenges, but oddly enough, it says that the current economic climate isn't one of them. The company was founded in the middle of the technology recession, and although its markets aren't recession-proof, its products can appeal to almost anyone in the technology space.

In fact, business problems such as spam don't go away during a recession, and marketing costs tend to be lower. People are also looking to cut costs, which Pao says benefits Barracuda at the price point it sells in. "When times are tough, people look for products with lower prices; in good times, they buy what everyone else is buying," he says.

Instead, the company's challenge has been to resolve the trade-off between more features and less volume. One of its main selling tactics is to provide its appliances free for a 30-day trial, and Pao says that in order to make that successful, the company has had to focus on simpler feature sets, ease of use, and ease of deployment. "If you're going to do a 30-day evaluation, you have to make it easy to use so that potential customers get the value right away—like in the first 15 minutes—or you're not going to get the business," Pao explains.

Expanding In All Directions

There are three main directions for growth for Barracuda, and one is market share. For example, Pao points out that although the company has 50,000 of its email security appliances in the hands of customers, the amount of mail received by Barracuda is only 2% of all mail in transit. "It's a fragmented marketplace, and in all markets, there's plenty of room for us to grow," he says.

International sales, as mentioned earlier, are also a fruitful area for growth. Barracuda's resellers are predominantly in the United States, but it is developing channels internationally in the interest of becoming a more global company.

But for Barracuda, new products have been an engine for expansion practically since day one, and the company is always working on its next product to offer to the marketplace. That will include acquisitions, too; the company bought Yosemite Technologies last month in order to add Yosemite's backup software to Barracuda's existing backup service.

Whatever direction growth comes from, Pao says the company is ready for it. "We've been set up for scaling and complexity since day one," he says. ▣

THREE QUESTIONS

Intelligent Power Solutions

Cyber Switching Provides Effective, Efficient Power Distribution For SMEs

by Julie Sartain

Founded in 1994 by power management expert Chuck Reynolds, Cyber Switching (408/436-9830; www.cyberswitching.com) is a pioneer in the field of power distribution technologies. It designs and develops innovative and technically advanced power solutions, such as its E Series power distribution units, Dualcom power management devices, and EMC (Enterprise Management Console) enterprise software.

Kevin McCabe is the company's director of software engineering. McCabe graduated from San Jose State University in 1986 with a degree in computer science engineering. He has an extensive background in scientific visualization systems and data analysis, and before Cyber Switching, he worked as a software engineer for 20 years.

■ **What are the biggest IT-related issues facing today's small to midsized enterprise?**

McCabe says the biggest issues facing today's SME are power management (that is, energy savings and load shed, which is the ability to control equipment based on peak energy demand), centralized management, uptime, and the capacity to plan for continued growth.

To help SMEs resolve these issues, McCabe says Cyber Switching designs and manufactures power management solutions and power distribution units that distribute power to rack equipment, all of which is especially beneficial to data centers, production environments, facilities, and development test labs that use PDUs and power management tools to power cycle and manage power to attached devices.

"Our intelligent PDUs can monitor current individually by outlet and/or provide virtual circuit breaker protection on an individual outlet basis," McCabe says. "We focus on the ease of usability, so our end users can navigate and do their jobs seamlessly."

■ **What should *Processor* readers know about your company's products?**

Cyber Switching currently offers intelligent PDUs, such as the Dualcom and Dualcom Plus, with two modes of communication: serial (out-of-band communication) and TCP/IP-based Ethernet (in-band communication). These power management devices provide solutions for remote access, rebooting, and power cycling for any device attached to the network or the individual system, anywhere in the world, McCabe notes, and they're low-cost solutions for any facility faced with lost operating time.

The Enterprise Management Console, or EMC, with Virtual PDU provides rich features such as auto-discovery, management, and monitoring of all Cyber Switching products connected to a network, all from a single IP-based interface and without the need to introduce new hardware into the network infrastructure, McCabe explains.

"The PM8 Power Management unit is a reliable power management solution that controls and monitors energy consumption on multiple circuits in any building's infrastructure," says McCabe.

It's simple to install and remotely controllable and provides individual outlet/circuit control and monitoring with circuits that can be selectively turned on/off. With this product, McCabe adds, IT staff can manage a building's electrical grid and load shedding of circuits during peak demand periods (in conjunction with the EMC) with ease.

■ **What makes your company unique?**

"We are domain experts in individual current monitoring (ICM), as we were the first to market with this technology in 2002," McCabe says. "We have a unique expertise in electrical power as a result of our founder's background, which allows us to solve problems and use products and features as proof points to the solution."

Cyber Switching's solutions offer enterprises worldwide increased reliability and improved functionality, McCabe says. "We work to bridge the gap between IT and facilities with the functionality of our PDUs, power management devices, and enterprise software." Additionally, McCabe cites the company's customer service as an offering that makes Cyber Switching stand out.